QUANTITY SURVEYING

Course code	Course title	No. of period/week	Total no. of periods	Marks for Formative Assessment	Marks for Summative Assessment
C-503	Quantity Surveying	05	75	20	80

Model Paper for Unit Test-I:

State Board of Technical Education and Training, A.P.
Diploma in Civil Engineering (DCE)
Fifth Semester: C-503 QUANTITY SURVEYING

Time: 90 Minutes Unit Test –I Maximum Marks: 40

PART- A **16 Marks**

Instructions:

(i) Answer all questions

(ii) First question carries FOUR marks, each question of remaining carries THREE marks.

1.(i) The preparation of bills for the payment is not one of the duties of quantity surveyor (True/False) (CO1)

(ii) The reinforcement in R.C.C. is measured in kN. (True/False) (CO1)

(iii) Area of ceiling plastering is equal to the following areas

(a) Area of plastering of internal walls

(b) Area of flooring

(c) Area of plastering of parapet wall

(d) Area of plastering of external wall (CO2)

(iv) The order of booking dimensions is

a) Length, breadth, height

b) Breadth, length, height

c) Height, breadth, length

d) None of the these (CO2)

2. State any three rules in calculating the plinth area of a building (CO2)

3. State units of measurements for (i) Plastering (ii) R.C.C in beams (iii) R.C.C. Sunshades (CO1)

4. A room has 6·0 m × 3·5 m internal dimensions with 300 mm wall thickness. The basement has a cross-section of 400 mm width and 600 mm height. Calculate (a) plinth area and (b) brick masonry in CM (1:8) in basement. (CO2)

5. The internal dimensions of a room are 6m × 4 m. Find the quantity of sand filling in basement, if the height and width of basement are 0.8 m and 0.4 m respectively. The wall thickness of room is 0.30 m. (CO2)

PART- B **3 x 8 = 24 Marks**

Instructions:

(i) Answer all questions

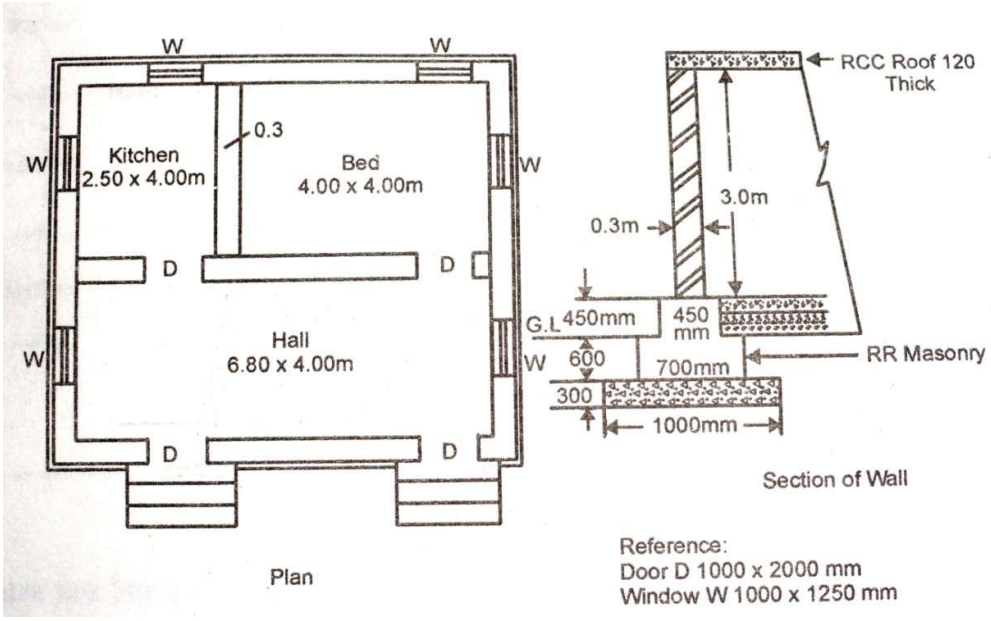
(ii) Each question carries EIGHT marks

(iii) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

6. (A) Prepare the detailed estimate for the following items of works from Drawing No.1

a. Earth work in excavation

b. R.C.C. (1:1 ½ :3) for roof slab. (CO2)



Drawing No.1

(OR)

(B) Prepare the detailed estimate for the following items of works from Drawing No.1

a. Sand filling in basement

b. Ceiling plastering (CO2)

7. (A) Explain briefly the 'long-wall & short-wall method' and 'central line method' mentioning the advantages of each one. (CO2)

(OR)

(B) Briefly explain any two methods of Approximate Estimate. (CO2)

8. (A) Find the cost of the following items of work from the lead statement and labour charges given below:

a) Cost of 1 cum of C.C. (1:4:8)

b) Cost of 1 cum of brick masonry in CM (1:6)

C.C (1:4:8):

Unit	1 Cum
40 mm HBG	0.92 cum
Sand	_____
Cement	_____
Masons	0.2 Nos.
Men Mazdoors	1.8 Nos.
Women Mazdoors	1.4 Nos.
Sundries	L.S.

Brick masonry in C.M. (1:6):

Unit	1 Cum
Bricks	512 Nos.
CM(1:6)	0.2 cum
Masons	1.4 Nos.

Men Mazdoors	0.7 Nos.
Women Mazdoors	2.1 Nos
Sundries	L.S.

Lead statement of materials:

S. No.	Material	Cost at source (Rs.)	Lead in km.	Conveyance charges	Seigniorage charges
1.	40 mm. HBG metal	110.00/cum	10	3.00/cum/km	4.50
2.	Sand	45.00/cum	6	2.50/cum/km	3.50
3.	Bricks	1600.00/1000 Nos.	8	5.50/1000 Nos./km	--
4.	Cement	5000.00/1 MT at site			

Labour charges:

I class masons - Rs.100.00 per day
II class masons - Rs.90.00 per day
Mazdoors - Rs.55.00 pr day
Mixing charges of CM- Rs.20.00 per cum. (CO2)

(OR)

(B) Find the cost of the following items of work from the lead statement and labour charges given below:

a) CR masonry in CM (1:6) in superstructure for 1 cum

Unit	1 Cum
Stones	1.25 cum
Mortar	0.42 cum
Masons	1.2 Nos.
Men Mazdoors	0.7 Nos.
Women Mazdoors	2.6 Nos.
Sundries	L.S.

c) Plastering with Cement mortar (1:6) for 10 sq. m

Unit	1 Cum
Cement	0.046cum
Sand	0.28 cum
Masons	0.8 Nos.
Men Mazdoors	1.8 Nos.
Sundries	L.S.

Lead statement of materials:

S.No.	Material	Cost at source	Lead in km.	Conveyance charges	Seigniorage charges
1.	40 mm. HBG metal	110.00/cum	10	3.00/cum/km	4.50
2.	Sand	45.00/cum	6	2.50/cum/km	3.50
3.	Bricks	1600.00/1000 Nos.	8	5.50/1000 Nos./km	--
4.	Cement	5000.00/1 MT at site			

Labour charges:

Masons - Rs.90.00 per day
Man mazdoors - Rs.65.00 per day
Woman mazdoors - Rs.60.00 pr day (CO2)

Model Paper for Unit Test-II:

State Board of Technical Education and Training, A.P.
Diploma in Civil Engineering (DCE)
Fourth Semester: C-503 QUANTITY SURVEYING

Time: 90 Minutes Unit Test –II Maximum Marks: 40

PART- A **16 Marks**

Instructions:

(i) Answer all questions
(ii) First question carries FOUR marks, each question of remaining carries THREE marks.

1 (i) The assumption on which the trapezoidal formula for volumes is based

a.) The end sections are parallell planes
b.) The mid area of a pyramid is half the average area of the ends
c.) The volume of prismoidal is over estimated and hence a prismoidal correction is applied.
d.) All of the above.

(ii) If the formation level of an highway has a uniform gradient for a particular length and the ground level is having a longitudinal slope, the earth work may be calculated by (CO4)

(a) Mid-sectional formula
(b) Trapezoidal formula
(c) Prismoidal formula
(d) All the above

(iii) If 'b' is the bottom width, 'd' is the depth of cutting and '1 in n' is the side slope of a canal, then the top width is given by_____ (CO4)

(iv) The storage of reservoir between bed level and sluice sill level is called (a) Gross storage

(a) Effective storage
(b) Dead storage
(c) Any of the above (CO4)

2. A cement-concrete pavement 150 mm thick and 6.20 m wide is laid over a base course 100 mm considering a length of 1200 m. Calculate the following quantities: (a) CC required for pavement (b) CC required for base course (CO3)

3.Prepare the detailed estimate of granular shoulders, on either side of the WBM road of 800 m.The width of shoulder is 1.00 m. The compacted thickness is 100 mm and loose thickness is 116 mm. (CO3)

4. Explain the terms lead and lift for the formation of roads and give the values of initial lead and initial lift. (CO4)

5. The depths at two ends of an embankment of a road of length 80 m are 2·5 m and 3·4 m. The formation width and side slopes are 12 m and 2:1 respectively. Estimate the quantity of earthwork by mid sectional area method. (CO4)

PART- B **3 x 8 = 24 Marks**

Instructions:

(i) Answer all questions
(ii) Each question carries EIGHT marks
(iii) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

6. (A)A road is to be formed in embankment with the following data

Chainage in m	0	30	60	90	120	150	180
R.L. of ground	98.20	98.40	97.70	97.50	98.10	98.40	98.50

Formation width of road is 12 m. Side slopes of embankment are 1½:1. The formation level may be taken as 100.00 throughout the length of road. The ground in transverse direction is level. Calculate the quantity of earth work by

i. Trapezoidal formula
ii. Prismoidal formula (CO4)

(OR)

(B) The ground levels along the ridge of proposed canal area are shown below:

Station	A	B	C	D	E	F	G
Ground Levels	252.00	252.15	251.70	251.75	251.95	251.85	252.00

The bed of the canal is 4.0 m wide and sloped 1 in 100 downwards in longitudinal direction. The side slopes are 2:1 and the bed level of canal at A is 250.00. Determine the volume of the earth work in cutting, if the chainage between the points is 20 m by (a) Trapezoidal Rule (b) Prismoidal Rule (CO4)

7. (A) From the particulars of a reservoir given below, calculate the live and surplus capacity of the reservoir (CO4)

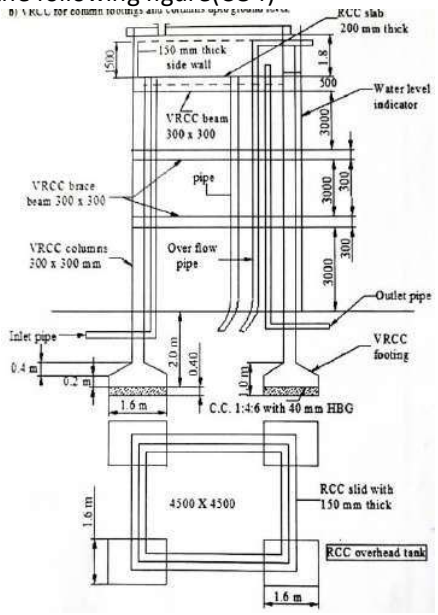
Contour level in m.	Contour areas in m^2	Particulars
110	17000	Bed level of reservoir
120	22000	-
130	29000	Sill of sluice
140	32000	-
150	68000	-
160	122000	F.T.L.
170	131000	M.W.L

(OR)

(B) From the particulars of a reservoir given below, calculate the capacity of reservoir between the sill level and MWL using Prismoidal and Trapezoidal rule (CO4)

Contour level in m.	Contour areas in m^2	Particulars
40.00	1500	Bed level of reservoir
42.00	2800	-
44.00	4200	Sill of sluice
46.00	6500	-
48.00	9500	-
50.00	12000	F.T.L.
52.00	15000	M.W.L

8.(A) Prepare the detailed estimate for the following items of work for the R.C.C. overhead tankshown in the following figure(CO4)



(OR)

(B) Calculate the following quantities of WBM road shown in the fig.5 for a length of 1.50 km:

i. Collection of 65 mm HBG for base course.
ii. Spreading of 40 mm HBG for wearing course.

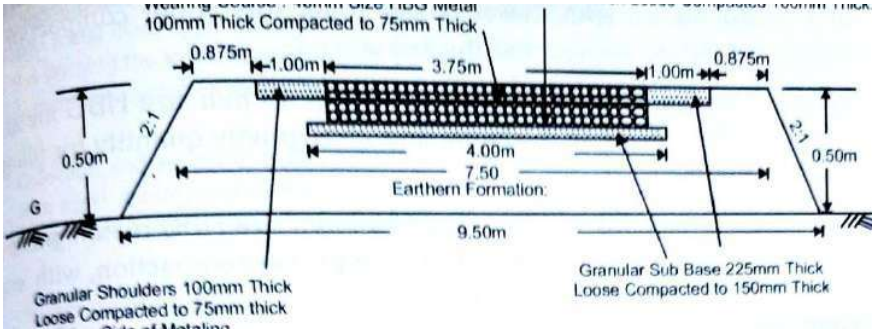


Fig.5 (CO3)

Model Paper for End Examination:

MODEL PAPER – BOARD DIPLOMA EXAMINATION, (C–20)
DCE—FOURTH SEMESTER EXAMINATION
QUANTITY SURVEYING-I (C-403)

Time: 3 hours] [Total Marks: 80

PART—A **3×10=30 Marks**

Instructions: **(**1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State units of measurements for (i) Plastering
(ii) R.C.C.
(iii) Earth work in excavation
(iv) Flooring. (CO1)
2. List various types of "Approximate Estimates" (CO1)
3. A room has 5.4 m x 3.2 m internal measurements with 300 mm thick wall. The basement has a cross section of 400 mm wide and 600 mm deep. (CO2)
Calculate (a) Brick masonry in CM (1:6) for basement
(c) Internal area of plastering
4. A room of size 4m x 5m with wall thickness of 230 mm is provided with an R.C.C. roof slab of 150 mm thick. The slab is projected by 300 mm all-round the building. Calculate the quantity R.C.C. in slab. (CO2)
5. Determine the quantity of cement required for 5 cum of R.C.C. 1: 2: 4 using 20 mm HBG metal. (CO2)
6. Write short notes on the following: (a) Seigniorage charges (b) Cess charges (CO2)
7. Explain the terms lead and lift for the earth work and give the values of initial lead and lift. (CO3)
8. Calculate quantity of earth work for a road, given formation width is 15 m, side slopes are 2:1, depth of embankment at ends is 3.1 m and 4.4 m and length of the road is 1200 m. by mean sectional area method. (CO3)
9. A cement concrete pavement 150 mm thick and 6.20 m wide is laid over a base course 100 mm considering a length of 1200 m. Calculate the quantity of C.C. required for pavement (CO4)
10. The cross section of a circular well is shown in the fig.1, calculate the quantity of masonry in parapet wall.

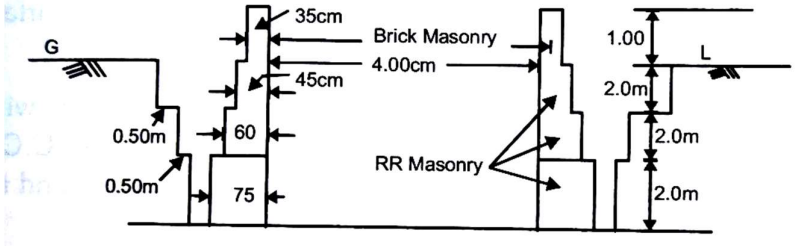


Fig.1 (CO4)

PART – B **5 x 10 = 50 marks**

Instructions:

- **i) Answer any FIVE questions**
- **ii) Each question carries TEN marks.**
- **iii) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.**

11. A) Prepare the detailed estimate for the following items of works from the fig.1 (CO2)
    i. Brick masonry in CM (1:6) in super structure -- 5 marks
    ii. White washing in two coats for internal walls -- 5 marks

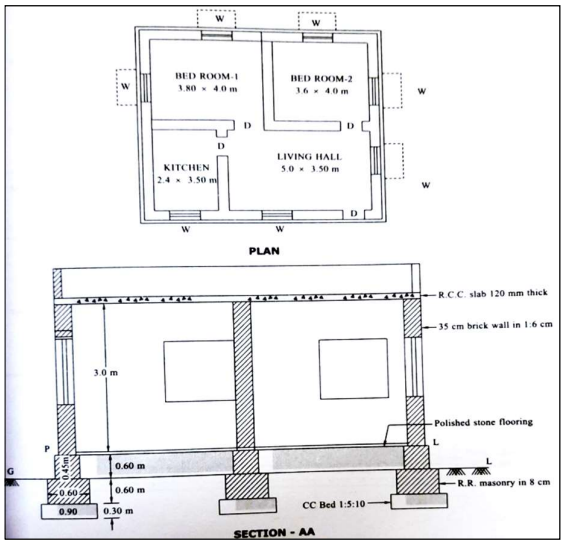


Fig.1 (CO2)

12. Prepare the detailed estimate for the following items of works from the fig.1 (CO2)
    a) Ceiling Plastering with CM (1:5) -- 5 marks
    b) R.C.C. (1:2:4) in lintels -- 5 marks

13. Find the cost of the following items of work from the lead statement and labour charges given below:
    CR masonry in CM (1:6) in superstructure for 1 cum (CO2)

Unit	1 Cum
Stones	1.25 cum
Cement Mortar	0.42 cum
Masons	1.2 Nos
Men mazdoors	0.7 Nos.
Women mazdoors	2.6 Nos.
Sundries	L.S

14. Find the cost of the following items of work from the lead statement and labour charges given below:

    Plastering with Cement mortar (1:6) for 10 sq.m (CO2)

Unit	1 Cum
Cement	0.046 cum
Sand	0.28 cum
Masons	0.8 Nos

Men mazdoors	1.8 Nos.
Sundries	L.S

Lead statement of materials:

S. No	Material	Cost at Source (Rs.)	Lead in km	Conveyance charges	Seiniorage charges
1	40 mm. HBG metal	110.00/cum	10	3.00/cum/km	4.50
2	Sand	45.00/cum	6	2.50/cum/km	3.50
3	Bricks	1600.00/1000 Nos.	8	5.50/1000 Nos./km	--
4	Cement	5000.00/1 MT at site	--		

Labour charges:

Masons - Rs.90.00 per day
Man mazdoor - Rs.65.00 per day
Woman mazdoor - Rs.60.00 pr day

15. A road is to be formed in embankment with the following data

Chainage in m	0	30	60	90	120	150	180
R.L. of ground	98.20	98.40	97.70	97.50	98.10	98.40	98.50

Formation width of road is 12 m. Side slopes of embankment are 1½:1. The formation level may be taken as 100.00 throughout the length of road. The ground in transverse direction is level. Calculate the quantity of earth work by

iii. Trapezoidal formula
iv. Prismoidal formula (CO3)

16. From the particulars of a reservoir given below, calculate the live and surplus capacity of the reservoir

Contour level in m.	Contour areas in m^2	Particulars
110	17000	Bed level of reservoir
120	22000	-
130	29000	Sill of sluice
140	32000	-
150	68000	-
160	122000	F.T.L.
170	131000	M.W.L

(CO3)

17. Prepare the detailed estimate for the cement concrete road of 1 km length with the following components (Fig.4)

i. Base course of CC (1:4:8) with 40 mm size HBG metal 150 mm thick
ii. Wearing coat with CC (1:2:4) with 20 mm size HBG metal 100 mm thick.

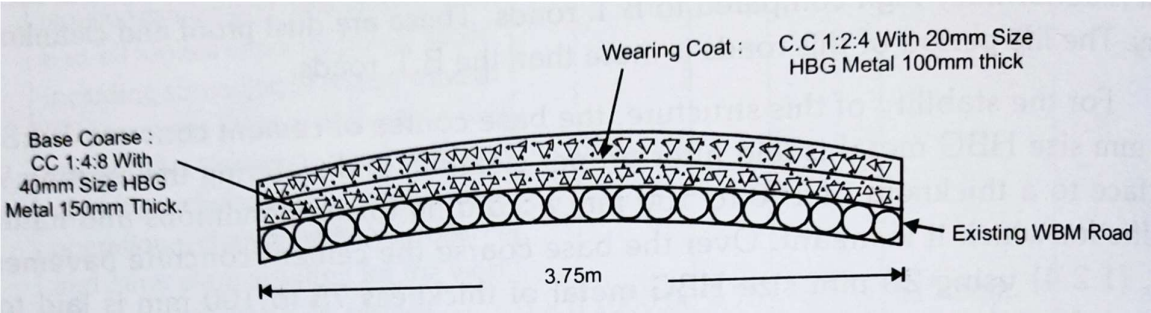


Fig.4 (CO4)

18. Calculate the following quantities of WBM road shown in the fig.5 for a length of 1.50 km:

i. Collection of 65 mm HBG for base course.

ii. Spreading of 40 mm HBG for wearing course.

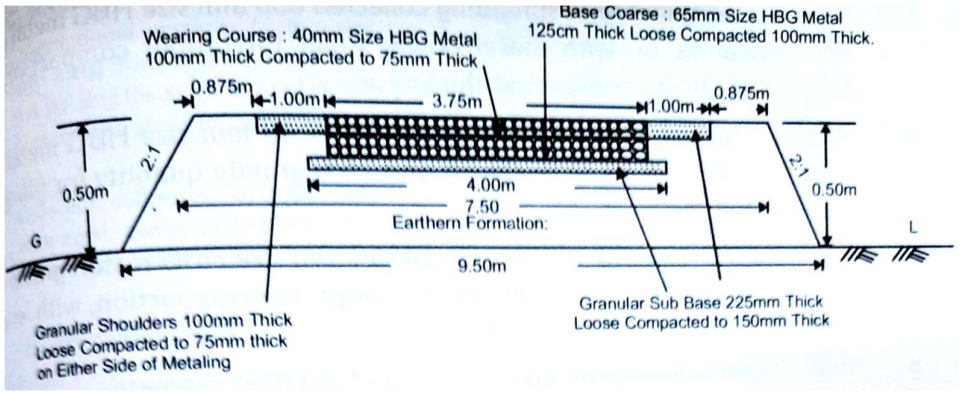


Fig.5 (CO4)